





National Aeronautics and Space Administration 

Small Business Innovation Research
Small Business Technology Transfer

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www.nasa.gov



What are the Space Technology Programs? 

<http://www.nasa.gov/spacetech>

NASA Innovative and Advanced Concepts (NIAC) – “Study innovative, technically credible, advanced concepts that could one day ‘Change the Possible’ in aerospace”

Space Technology Research Grants and Fellowships – Graduate student research fellowships and grants to academia, NASA field centers and not-for-profit R&D laboratories

Center Innovation Fund (CIF) – stimulate innovation within the NASA Centers support emerging technologies and creative initiatives - NASA scientists and engineers lead projects, partnerships with other agencies, academia and private industry are encouraged.

Centennial Challenges – Prize Competitions

Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR)


Small Spacecraft Technology Program - Accelerate the development of small spacecraft capabilities for NASA, commercial, and other space sector users.

Flight Opportunities - Create multiple paths through which innovative technologies may be matured from concept to flight by facilitating low-cost access to suborbital environments

Game Changing Development (GCD) – Develop technologies that produce “dramatic” impacts for NASA’s Space Exploration and Science Missions; a balanced approach of guided technology development efforts and competitively selected efforts

Technology Demonstration Missions (TDM) - Seeks to mature laboratory-proven technologies to flight-ready status; system-level technology solutions are given the opportunity to operate in the actual space environment

General Overview



Part of new focus a Space Technology At NASA

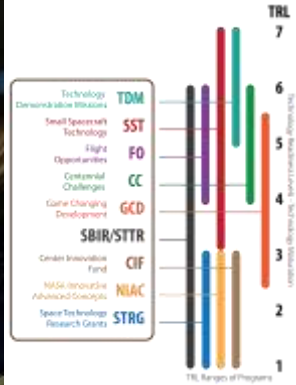
- One of 9 Programs within Space Technology Mission Directorate – tackling new technology development challenges across all “Technology Readiness Levels”

SBIR & STTR

- Topics/Subtopics developed to support the needs of NASA’s other Mission Directorates – Science, Human Exploration & Operations, Aeronautics Research
- Topics/Subtopics developed to support mid- to long-term technology development needs identified in NASA’s “Space Technology Roadmaps” or the National Aeronautics R&D Plan

NASA Centers Play Critical Role

- All SBIR/STTR projects are managed at one of NASA’s 10 Centers – home to NASA’s development projects, research facilities, and Subject Matter Experts












Space Technology Technical Areas




<p>TA01</p>  <p>TA02</p>  <p>TA03</p>  <p>TA04</p>  <p>TA05</p>  <p>TA06</p>  <p>TA07</p> 	<p>• LAUNCH PROPULSION SYSTEMS</p> <p>• IN-SPACE PROPULSION TECHNOLOGIES</p> <p>• SPACE POWER & ENERGY STORAGE</p> <p>• ROBOTICS, TELE-ROBOTICS & AUTONOMOUS SYSTEMS</p> <p>• COMMUNICATION & NAVIGATION</p> <p>• HUMAN HEALTH, LIFE SUPPORT & HABITATION SYSTEMS</p> <p>• HUMAN EXPLORATION DESTINATION SYSTEMS</p>	<p>TA08</p>  <p>TA09</p>  <p>TA10</p>  <p>TA11</p>  <p>TA12</p>  <p>TA13</p>  <p>TA14</p> 	<p>• SCIENCE INSTRUMENTS, OBSERVATORIES & SENSOR SYSTEMS</p> <p>• ENTRY, DESCENT & LANDING SYSTEMS</p> <p>• NANOTECHNOLOGY</p> <p>• MODELING, SIMULATION, INFORMATION TECHNOLOGY & PROCESSING</p> <p>• MATERIALS, STRUCTURES, MECHANICAL SYSTEMS & MANUFACTURING</p> <p>• GROUND & LAUNCH SYSTEMS PROCESSING</p> <p>• THERMAL MANAGEMENT SYSTEMS</p>
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Space Technology Future Thrust Areas






							
High Power Solar Electric Propulsion	Space Optical Comm.	Advanced life Support & Resource Utilization	Mars Entry Descent and Landing Systems	Space Robotic Systems	Lightweight Space Structures	Deep Space Navigation	Space Observatory Systems
Deep space human exploration, science missions and commercial applications with investments in advanced solar arrays, high-power Hall thrusters and power processing units.	Substantially increase the available bandwidth for near Earth space communications currently limited by power and frequency allocation restrictions, and increase the communications throughput for deep space missions.	Technologies for human exploration mission including Mars atmospheric in-situ resource utilization, near closed loop air revitalization and water recovery, EVA gloves and radiation protection.	Permits more capable science missions, eventual human missions to Mars including hypersonic and supersonic aerodynamic decelerators, a new generation of compliant TPS, material, retro-propulsion technology, instrumentation and modeling capabilities.	Creates future humanoid robotics, autonomy and remote operation technologies to substantially augment the capability of future human space flight missions.	Targets substantial increases in launch mass, and allow for large decreases in needed structural mass for spacecraft and in-space structures.	Allows for more capable science and human exploration missions using advanced atomic clocks, x-ray detection and fast light optical gyroscopes.	Allows for significant increases in future science capabilities including ASTROQUEST tomograph technology for radioactive exoplanets by direct observation and advances in the surface materials as well as control systems for large space optics.

Further Understanding NASA Needs



- In Science – “Decadal Surveys” and NASA-developed implementation documents
 - Planetary Science
 - http://solarsystem.nasa.gov/multimedia/download-detail.cfm?DL_ID=742
 - Astronomy and Astrophysics
 - <http://science.nasa.gov/astrophysics/special-events/astro2010-astronomy-and-astrophysics-decadal-survey/>
 - http://science.nasa.gov/media/medialibrary/2013/04/15/secure-ImpPlan_R2_15Apr2013.pdf
 - Heliophysics (Solar and Space Physics)
 - http://www.nap.edu/catalog.php?record_id=13060
 - http://www.nasa.gov/mission_pages/sunearth/news/decadal-2012.html
 - http://science.nasa.gov/media/medialibrary/2010/03/31/Heliophysics_Roadmap_2009_tagged-quads.pdf
 - Earth Science
 - <http://science.nasa.gov/earth-science/decadal-surveys/>
 - <http://esto.nasa.gov/>
- In Aeronautics Research
 - National Aeronautics R&D Plan
 - <http://www.whitehouse.gov/sites/default/files/microsites/ostp/aero-rdplan-2010.pdf>
 - Various Detailed NASA Aeronautics Research documents
 - <http://www.aeronautics.nasa.gov/programs.htm>



NASA SBIR Website



- Electronic Handbook (EHB)

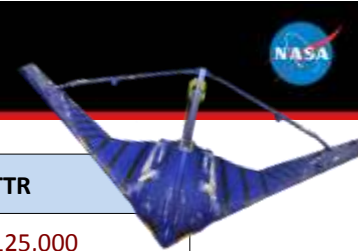



YOU MUST FIRST BE REGISTERED WITH THE SMALL BUSINESS ADMINISTRATION AT:
<http://www.sbir.gov/registration>

<http://sbir.nasa.gov>

SBIR/STTR General Solicitation

Phase I Contracts	SBIR	STTR
Maximum Contract Value	\$125,000	\$125,000
Period of Performance	6 months	6 months
Phase II Contracts	SBIR	STTR
Maximum Contract Value	\$750,000	\$750,000
Period of Performance	24 months	24 months

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SBIR Select Solicitation



Select Phase I Contracts	SBIR
Maximum Contract Value	\$125,000
Period of Performance	6 months
Select Phase II Contracts	SBIR
Maximum Contract Value	\$1,500,000
Period of Performance	24 months


- Phase II \$\$ is double that of the SBIR/STTR Phase II Contract Value**



SBIR Only

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SBIR/STTR – Beyond Phase II




Phase II-Enhancement (II-E)

Phase II-E	Minimum non-SBIR/STTR Funding Required for Eligibility for Matching in Phase II-E	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$25,000	\$25,000	6-12 Months
	Maximum non-SBIR/STTR Funding to be Matched by SBIR/STTR Program in Phase II-E	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$125,000	\$125,000	6-12 Months

Phase II-eXpanded (II-X)

Phase II-X	Minimum Funding Required from non-SBIR/STTR NASA Source for Eligibility for Matching in Phase II-X	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$75,000	\$150,000	12-24 Months
	Maximum Funding Amount from non-SBIR/STTR NASA Source to be Matched in Phase II-X	Corresponding SBIR/STTR Program Contribution	Anticipated Period of Additional Performance
	\$250,000	\$500,000	12-24 Months

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The banner features a colorful, abstract image of a globe or satellite on the left, the text "NASA SBIR CRP" in white on a black background in the center, and the NASA logo on the right.

NASA SBIR CRP

- Executing limited pilot effort for a CRP in FY 2014, which will expand in FY 2015.
- Goal – to more directly infuse SBIR/STTR-developed technology into NASA's broader programs
- NASA programs act as "Sponsors"
 - Sponsors must illustrate how they intended to conduct critical risk reduction or test-and-demonstration activities - activities that if not conducted would limit commercialization opportunities
 - SBIR/STTR Program will be able to offer partnership funding for technology maturation, if Sponsor Programs provide matching funds
 - Sponsor Programs must present a SBIR/STTR Technology Maturation Plan (STMP) to the SBIR/STTR Program; the STMP must identify funding needs, schedule, opportunities and plans for infusion or commercialization
- Currently examining process used in first half of FY 2014
- Anticipate a user guide and STMP forms on SBIR website in FY 2015